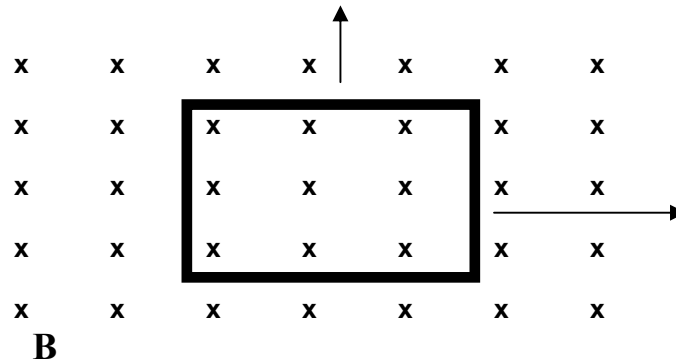


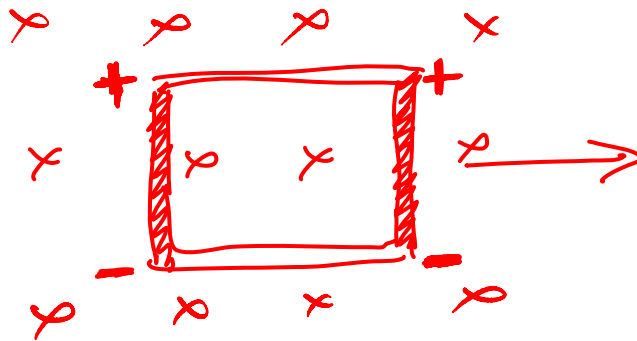
Example #4: A rectangular loop of wire is placed in a magnetic field as shown. Explain what will happen when the loop is moved:

- a) to the right;
- b) up toward the top of the page.



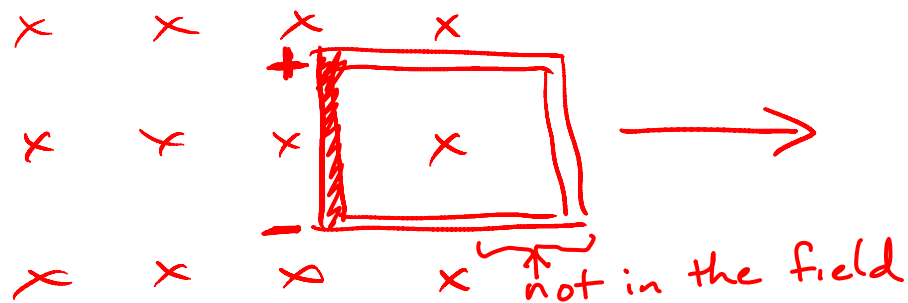
a) in field:

an induced EMF is set up in two parts of the wire:



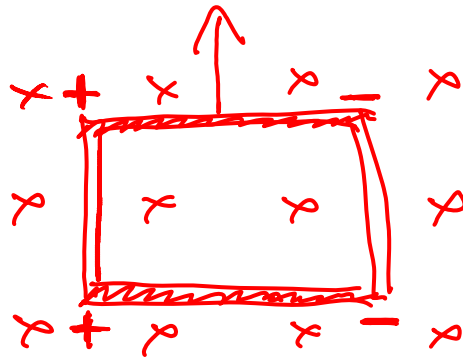
→ in these two parts, using RHR, positive charges move to top, negative to bottom; these sections are like two batteries attached in reverse, so no current will flow

- as loop moves out of the field, an EMF is set up in one section only



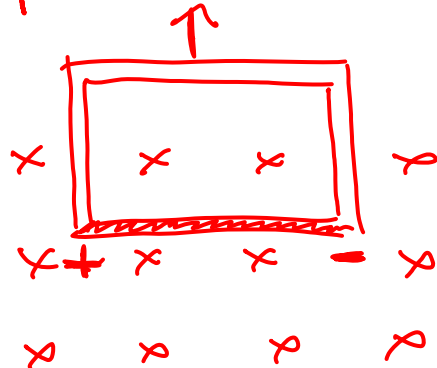
- this single EMF "battery" will cause current to flow counterclockwise in the loop.

b) - initially, no current again:



(note polarity of the two sections, using RHR)

- as loop moves out of the field:



- the polarity of the one section causes a counterclockwise current in the loop.